PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PU040067	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/US2004/007199	International filing date *(day/month/year)* 09.03.2004	Priority date *(day/month/year)* 11.03.2003
International Patent Classification (IPC) or national classification and IPC H04N7/10, H04N7/20, H04H1/00		
Applicant THOMSON LICENSING S.A. et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 4 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the opinion
   - ☐ Box No. II Priority
   - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☐ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☐ Box No. VII Certain defects in the international application
   - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
30.09.2004	31.05.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer McGrath, S Telephone No. +49 89 2399-8961

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US2004/007199

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-13	as originally filed
Claims, Numbers	
1-20	received on 30.09.2004 with letter of 30.09.2004
Drawings, Sheets	
1-5	as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-20
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-20
Industrial applicability (IA)	Yes:	Claims	1-20
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

1. The following documents cited in the International Search Report (ISR) are referred to in this Report:

   D1 : US 6 084 638 A
   D2: WO 02/25847 A
   D3: ROSTAMI M ET AL: "Multi-decoder digital television platform" PROCEEDINGS 28TH EUROMICRO CONFERENCE, 4-6 SEPT. 2002, 4 September 2002 (2002-09-04), pages 170-175, XP010612143 DORTMUND, GERMANY

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

2.1 Document D1, see in particular the passages cited in the ISR, discloses (the references in parenthesis applying to this document):

an apparatus, comprising:
processing means (Fig. 1b, 63,52) for receiving signals and processing said received signals to generate analog signals without demodulating the received signals;
control means for enabling generation of said analog signals responsive to a request signal (58 - the "request signal", ie selecting an LO frequency for down-converting, is derived in the FAM once the unused channels have been identified); and
wherein said analog signals are provided to a client device (Fig. 1 - TV 4) via a transmission medium (cable 61) connecting said apparatus and said client device.

2.2 Whilst D1 does not mention satellite signals, the claim is silent as to any concrete features relating to satellites. The wording "processing means for receiving satellite signals and processing said received signals" is interpreted as merely representing the suitability for receiving such signals, wherever they actually come from. Furthermore starting only from the broad term "satellite signal" it is not clear what

actual properties such a signal has. It is also debatable whether a signal coming from an LNB and the like is actually a "satellite signal" at all since the satellite signal would normally be the signal coming directly (or via simple circuits like amplifiers, splitters etc) from a satellite.
See also the description of the current application, page 4, lines 12-14.

Thus in conclusion it appears that D1 also discloses circuits having the suitability for receiving and processing the signals as broadly defined in the claim, and even if some difference were to be recognized this would be obvious for the skilled person.

2.3 The applicants have argued that D1 does not disclose processing of received signals "without demodulating". They referred to col. 6, lines 27-31. Whilst this passage clearly mentions a type of demodulation, namely to down-convert the RF signals used to provide a wireless connection from the PC 2/10 to the TV receiver 4, in col. 6 lines 31-34 an alternative is mentioned which provides an RF input to the TV receiver 4. Thus this RF signal is not "demodulated". Even the composite video and its audio channels must also still be in "modulated" form to some extent since it implies the use of sub-carriers. This also falls under the broad wording "without demodulating".

It is also noted that the phrase "without demodulating" is almost meaningless since the type of modulation referred to is completely unclear. Thus this part feature merely concerns *not* doing something which is not clearly defined.
If the applicants choose to enter the regional phase at the European Patent Office they should consider using more positive features rather than a feature which has the appearance of a disclaimer and is not even clear.

3. Given the unclear terminology used in claim 1, D2 is also considered to render obvious the subject-matter of claim 1.
D2 clearly does disclose signals coming directly from satellites, and being processed by LNBs etc.
The output of the receiver modules 16 in the figure also provide signals which are, at least implicitly, in modulated form - see page 6, lines 3-6, page 7, lines 10-12, & page 8, lines 3-8.

Using this analysis D3 is also relevant with regard to inventive step.
See for example Fig. 4. D3 also uses DVB receivers followed by modulators in order to feed satellite derived signals into a cable network.

Whilst like D2, D3 appears to use a demodulator followed by another modulator, since in all of D1-D3, at least in some embodiments, the signals sent to "clients" via the cables must be in modulated form.
Claim 1 is still too broad in this respect.
However, even if claim 1 were to be amended to clarify this point, it appears that it would be still be obvious for the skilled person to replace the "back-to-back" demodulator-modulator modules by a single device, such as mixers 21-24 as shown in Fig. 2 of the present application in order to reduce the complexity and cost of the system.

4. Essentially the same arguments apply to independent claims 8.
Whilst as compared to claim 1, claim 8 explicitly mentions "receiving satellite signals", it still fails to define a "satellite signal". Given that any signal in a multimedia system could have been sent by satellite, stored and then reused, it appears to be obvious that the systems of D1 are also suitable for using general purpose signals which have perhaps once in their lifetime been a "satellite signal".
In general a signal can only be characterized by its inherent properties and not by where it comes from, unless of course the whole system is claimed.

5. Dependent claims 2-10 & 12-20 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Art. 33(3) PCT), the reasons being as follows:

claims 3-6,13-16, - see D1;
claims 2, 12, 18 - see D2, the Abstract;
claims 7,10,17,20 - see D3, the passages cited in the ISR.
claims 8,9,18,19 - see D1-D3 and section 3 above.

CLAIMS:

1. An apparatus (20), comprising:

processing means (21-32) for receiving satellite signals and processing said received signals to generate analog signals without demodulating the received signals;

control means (34) for enabling generation of said analog signals responsive to a request signal; and

wherein said analog signals are provided to a client device (40) via a transmission medium connecting said apparatus (20) and said client device (40).

2. The apparatus (20) of claim 1, wherein said transmission medium includes RG-59 cable.

3. The apparatus (20) of claim 1, wherein said processing means (21-32) includes:

frequency converting means (21-28) for converting said received signals from a first frequency band to a second frequency band to generate frequency converted signals; and

filtering means (29-32) for filtering said frequency converted signals to generate said analog signals.

4. The apparatus (20) of claim 3, wherein:

said first frequency band is greater than 1 GHz; and

said second frequency band is less than 1 GHz.

5. The apparatus (20) of claim 1, wherein:

said control means (34) detects an available frequency band on said transmission medium; and

said available frequency band is used to provide said analog signals to said client device (40).

6. The apparatus (20) of claim 5, wherein said control means (34) scans a plurality of frequency bands on said transmission medium to detect said available frequency band.

7. The apparatus (20) of claim 5, wherein said control means (34) detects said available frequency band based on a user input which selects said available frequency band.

8. The apparatus (20) of claim 5, wherein said processing means (21-32) comprises:

frequency converting means (21-28) for converting said received signals from a first frequency band to the available frequency band to generate frequency converted signals; and

filtering means (29-32) for filtering said frequency converted signals to generate said analog signals.

9. The apparatus (20) of claim 8, wherein said frequency converting means (21-38) comprises a signal mixer (21-24).

10. The apparatus (20) of claim 1, wherein said request signal is provided to said apparatus (20) via said transmission medium.

11. A method (500) for distributing signals from a gateway apparatus to a device, comprising steps of:

receiving satellite signals (510);

receiving a request signal from said device indicating a channel (520);

processing said received signals to generate analog signals corresponding to said channel responsive to said request signal (540), without demodulating said received signals; and

providing said analog signals to said device via a transmission medium connecting said gateway apparatus and said device (550).

12. The method (500) of claim 11, wherein said transmission medium includes RG-59 cable.

13. The method (500) of claim 11, wherein said processing step (540) includes:

converting said received signals from a first frequency band to a second frequency band to generate frequency converted signals; and

filtering said frequency converted signals to generate said analog signals.

14. The method (500) of claim 13, wherein:

said first frequency band is greater than 1 GHz; and

said second frequency band is less than 1 GHz.

15. The method (500) of claim 11, further comprising a step of:

detecting an available frequency band on said transmission medium (530); and

wherein said available frequency band is used to provide said analog signals to said device.

16. The method (500) of claim 15, wherein said detecting step (530) includes scanning a plurality of frequency bands on said transmission medium to identify said available frequency band.

17. The method (500) of claim 15, wherein said detecting step (530) is performed based on a user input which selects said available frequency band.

18. The method (500) of claim 15, wherein said processing step (540) comprises the steps of:

converting said received signals from a first frequency band to the available frequency band to generate frequency converted signals; and

filtering said frequency converted signals to generate said analog signals.

19. The method (500) of claim 18, wherein said converting step comprises the step of mixing said received signals in the first frequency band with a generated frequency signal.

20. The method (500) of claim 11, wherein said request signal is provided to said gateway apparatus via said transmission medium.